

## SEQUENCE LISTING

<110> BATTAGLINO, PETER  
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 KORNACKER, MICHAEL G

<120> A NOVEL HUMAN G-PROTEIN COUPLED RECEPTOR, HGPRBMY8,  
 EXPRESSED HIGHLY IN BRAIN

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<140> TBA

<141> 2001-11-13

<150> 60/317166

<151> 2001-09-04

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<170> PatentIn Ver. 2.1

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 Asp Glu Cys Glu Asp Glu Asp Ser Asp Glu Lys Arg Asp Asp His Thr  
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 Lys Arg Gly Tyr Lys Phe Lys Pro Ser Ser Pro Cys Ala Asn Gly Ala  
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 Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr  
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 Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe  
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 Cys Val Val Ala Ala Ile Ala Leu Glu Arg Ser Leu Gln Asn Val Ala  
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 Gly Arg Ile Phe Lys Ala Ala Arg Phe Arg Ile Arg Lys Thr Val Lys  
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 Asp Ser Ser Ala Gly Gly Ser Ser Ala Gly Gly Gly Gly Gly Ser Ala  
 20 25 30  
 Gly Gly Ala Ala Pro Ser Glu Gly Pro Ala Val Gly Gly Val Pro Gly  
 35 40 45  
 Gly Ala Gly Gly Gly Gly Gly Val Val Gly Ala Gly Ser Gly Glu Asp  
 50 55 60  
 Asn Arg Ser Ser Ala Gly Glu Pro Gly Ser Ala Gly Ala Gly Gly Asp  
 65 70 75 80  
 Val Asn Gly Thr Ala Ala Val Gly Gly Leu Val Val Ser Ala Gln Gly  
 85 90 95  
 Val Gly Val Gly Val Phe Leu Ala Ala Phe Ile Leu Met Ala Val Ala  
 100 105 110  
 Gly Asn Leu Leu Val Ile Leu Ser Val Ala Cys Asn Arg His Leu Gln  
 115 120 125  
 Thr Val Thr Asn Tyr Phe Ile Val Asn Leu Ala Val Ala Asp Leu Leu

130					135					140						
Leu	Ser	Ala	Thr	Val	Leu	Pro	Phe	Ser	Ala	Thr	Met	Glu	Val	Leu	Gly	
145					150					155				160		
Phe	Trp	Ala	Phe	Gly	Arg	Ala	Phe	Cys	Asp	Val	Trp	Ala	Ala	Val	Asp	
				165					170					175		
Val	Leu	Cys	Cys	Thr	Ala	Ser	Ile	Leu	Ser	Leu	Cys	Thr	Ile	Ser	Val	
			180					185					190			
Asp	Arg	Tyr	Val	Gly	Val	Arg	His	Ser	Leu	Lys	Tyr	Pro	Ala	Ile	Met	
		195					200					205				
Thr	Glu	Arg	Lys	Ala	Ala	Ala	Ile	Leu	Ala	Leu	Leu	Trp	Val	Val	Ala	
	210					215					220					
Leu	Val	Val	Ser	Val	Gly	Pro	Leu	Leu	Gly	Trp	Lys	Glu	Pro	Val	Pro	
225					230					235				240		
Pro	Asp	Glu	Arg	Phe	Cys	Gly	Ile	Thr	Glu	Glu	Ala	Gly	Tyr	Ala	Val	
				245					250					255		
Phe	Ser	Ser	Val	Cys	Ser	Phe	Tyr	Leu	Pro	Met	Ala	Val	Ile	Val	Val	
			260					265					270			
Met	Tyr	Cys	Arg	Val	Tyr	Val	Val	Ala	Arg	Ser	Thr	Thr	Arg	Ser	Leu	
		275					280					285				
Glu	Ala	Gly	Val	Lys	Arg	Glu	Arg	Gly	Lys	Ala	Ser	Glu	Val	Val	Leu	
	290					295					300					
Arg	Ile	His	Cys	Arg	Gly	Ala	Ala	Thr	Gly	Ala	Asp	Gly	Ala	His	Gly	
305					310					315				320		
Met	Arg	Ser	Ala	Lys	Gly	His	Thr	Phe	Arg	Ser	Ser	Leu	Ser	Val	Arg	
				325					330					335		
Leu	Leu	Lys	Phe	Ser	Arg	Glu	Lys	Lys	Ala	Ala	Lys	Thr	Leu	Ala	Ile	
			340					345					350			
Val	Val	Gly	Val	Phe	Val	Leu	Cys	Trp	Phe	Pro	Phe	Phe	Phe	Val	Leu	
		355					360					365				
Pro	Leu	Gly	Ser	Leu	Phe	Pro	Gln	Leu	Lys	Pro	Ser	Glu	Gly	Val	Phe	
	370					375					380					
Lys	Val	Ile	Phe	Trp	Leu	Gly	Tyr	Phe	Asn	Ser	Cys	Val	Asn	Pro	Leu	
385					390					395				400		
Ile	Tyr	Pro	Cys	Ser	Ser	Arg	Glu	Phe	Lys	Arg	Ala	Phe	Leu	Arg	Leu	
			405						410				415			
Leu	Arg	Cys	Gln	Cys	Arg	Arg	Arg	Arg	Arg	Arg	Arg	Pro	Leu	Trp	Arg	
			420				425					430				
Val	Tyr	Gly	His	His	Trp	Arg	Ala	Ser	Thr	Ser	Gly	Leu	Arg	Gln	Asp	
		435					440					445				

Cys Ala Pro Ser Ser Gly Asp Ala Pro Pro Gly Ala Pro Leu Ala Leu  
450 455 460

Thr Ala Leu Pro Asp Pro Asp Pro Glu Pro Pro Gly Thr Pro Glu Met  
465 470 475 480

Gln Ala Pro Val Ala Ser Arg Arg Lys Pro Pro Ser Ala Phe Arg Glu  
485 490 495

Trp Arg Leu Leu Gly Pro Phe Arg Arg Pro Thr Thr Gln Leu Arg Ala  
500 505 510

Lys Val Ser Ser Leu Ser His Lys Ile Arg Ala Gly Gly Ala Gln Arg  
515 520 525

Ala Glu Ala Ala Cys Ala Gln Arg Ser Glu Val Glu Ala Val Ser Leu  
530 535 540

Gly Val Pro His Glu Val Ala Glu Gly Ala Thr Cys Gln Ala Tyr Glu  
545 550 555 560

Leu Ala Asp Tyr Ser Asn Leu Arg Glu Thr Asp Ile  
565 570

<210> 14

<211> 562

<212> PRT

<213> Mus musculus

<400> 14

Met Thr Phe Arg Asp Ile Leu Ser Val Thr Phe Glu Gly Pro Arg Ala  
1 5 10 15

Ser Ser Ser Thr Gly Gly Ser Gly Ala Gly Gly Gly Ala Gly Thr Val  
20 25 30

Gly Pro Glu Gly Pro Ala Val Gly Gly Val Pro Gly Ala Thr Gly Gly  
35 40 45

Ser Ala Val Val Gly Thr Gly Ser Gly Glu Asp Asn Gln Ser Ser Thr  
50 55 60

Ala Glu Ala Gly Ala Ala Ala Ser Gly Glu Val Asn Gly Ser Ala Ala  
65 70 75 80

Val Gly Gly Leu Val Val Ser Ala Gln Gly Val Gly Val Gly Val Phe  
85 90 95

Leu Ala Ala Phe Ile Leu Thr Ala Val Ala Gly Asn Leu Leu Val Ile  
100 105 110

Leu Ser Val Ala Cys Asn Arg His Leu Gln Thr Val Thr Asn Tyr Phe  
115 120 125

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Ser Ala Ala Val Leu  
130 135 140

Pro Phe Ser Ala Thr Met Glu Val Leu Gly Phe Trp Pro Phe Gly Arg



145					150					155				160	
Thr	Phe	Cys	Asp	Val	Trp	Ala	Ala	Val	Asp	Val	Leu	Cys	Cys	Thr	Ala
				165					170					175	
Ser	Ile	Leu	Ser	Leu	Cys	Thr	Ile	Ser	Val	Asp	Arg	Tyr	Val	Gly	Val
			180					185					190		
Arg	His	Ser	Leu	Lys	Tyr	Pro	Ala	Ile	Met	Thr	Glu	Arg	Lys	Ala	Ala
		195					200					205			
Ala	Ile	Leu	Ala	Leu	Leu	Trp	Ala	Val	Ala	Leu	Val	Val	Ser	Val	Gly
	210					215					220				
Pro	Leu	Leu	Gly	Trp	Lys	Glu	Pro	Val	Pro	Pro	Asp	Glu	Arg	Phe	Cys
225					230					235					240
Gly	Ile	Thr	Glu	Glu	Val	Gly	Tyr	Ala	Ile	Phe	Ser	Ser	Val	Cys	Ser
				245					250					255	
Phe	Tyr	Leu	Pro	Met	Ala	Val	Ile	Val	Val	Met	Tyr	Cys	Arg	Val	Tyr
			260					265					270		
Val	Val	Ala	Arg	Ser	Thr	Thr	Arg	Ser	Leu	Glu	Ala	Gly	Ile	Lys	Arg
		275					280					285			
Glu	Pro	Gly	Lys	Ala	Ser	Glu	Val	Val	Leu	Arg	Ile	His	Cys	Arg	Gly
	290					295					300				
Ala	Ala	Thr	Ser	Ala	Lys	Gly	Asn	Pro	Gly	Thr	Gln	Ser	Ser	Lys	Gly
305					310					315					320
His	Thr	Leu	Arg	Ser	Ser	Leu	Ser	Val	Arg	Leu	Leu	Lys	Phe	Ser	Arg
				325					330					335	
Glu	Lys	Lys	Ala	Ala	Lys	Thr	Leu	Ala	Ile	Val	Val	Gly	Val	Phe	Val
			340					345					350		
Leu	Cys	Trp	Phe	Pro	Phe	Phe	Phe	Val	Leu	Pro	Leu	Gly	Ser	Leu	Phe
		355					360					365			
Pro	Gln	Leu	Lys	Pro	Ser	Glu	Gly	Val	Phe	Lys	Val	Ile	Phe	Trp	Leu
	370					375					380				
Gly	Tyr	Phe	Asn	Ser	Cys	Val	Asn	Pro	Leu	Ile	Tyr	Pro	Cys	Ser	Ser
385					390					395					400
Arg	Glu	Phe	Lys	Arg	Ala	Phe	Leu	Arg	Leu	Leu	Arg	Cys	Gln	Cys	Arg
				405					410					415	
Arg	Arg	Arg	Arg	Arg	Leu	Trp	Pro	Ser	Leu	Arg	Pro	Pro	Leu	Ala	Ser
				420				425					430		
Leu	Asp	Arg	Arg	Pro	Ala	Leu	Arg	Leu	Cys	Pro	Gln	Pro	Ala	His	Arg
		435					440					445			
Thr	Pro	Arg	Gly	Ser	Pro	Ser	Pro	His	Cys	Thr	Pro	Arg	Pro	Gly	Leu
	450					455					460				

Arg Arg His Ala Gly Gly Ala Gly Phe Gly Leu Arg Pro Ser Lys Ala  
 465 470 475 480  
 Ser Leu Arg Leu Arg Glu Trp Arg Leu Leu Gly Pro Leu Gln Arg Pro  
 485 490 495  
 Thr Thr Gln Leu Arg Ala Lys Val Ser Ser Leu Ser His Lys Phe Arg  
 500 505 510  
 Ser Gly Gly Ala Arg Arg Ala Glu Thr Ala Cys Ala Leu Arg Ser Glu  
 515 520 525  
 Val Glu Ala Val Ser Leu Asn Val Pro Gln Asp Gly Ala Glu Ala Val  
 530 535 540  
 Ile Cys Gln Ala Tyr Glu Pro Gly Asp Leu Ser Asn Leu Arg Glu Thr  
 545 550 555 560  
 Asp Ile

<210> 15  
 <211> 499  
 <212> PRT  
 <213> Homo sapiens

<400> 15  
 Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln  
 1 5 10 15  
 Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
 20 25 30  
 Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
 35 40 45  
 Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
 50 55 60  
 Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
 65 70 75 80  
 Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg  
 85 90 95  
 Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110  
 Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
 115 120 125  
 Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu  
 130 135 140  
 Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly  
 145 150 155 160  
 Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys

165										170					175				
Gln	Ile	Asn	Glu	Glu	Pro	Gly	Tyr	Val	Leu	Phe	Ser	Ala	Leu	Gly	Ser				
			180					185					190						
Phe	Tyr	Leu	Pro	Leu	Ala	Ile	Ile	Leu	Val	Met	Tyr	Cys	Arg	Val	Tyr				
		195					200					205							
Val	Val	Ala	Lys	Arg	Glu	Ser	Arg	Gly	Leu	Lys	Ser	Gly	Leu	Lys	Thr				
	210					215					220								
Asp	Lys	Ser	Asp	Ser	Glu	Gln	Val	Thr	Leu	Arg	Ile	His	Arg	Lys	Asn				
225					230					235					240				
Ala	Pro	Ala	Gly	Gly	Ser	Gly	Met	Ala	Ser	Ala	Lys	Thr	Lys	Thr	His				
			245					250						255					
Phe	Ser	Val	Arg	Leu	Leu	Lys	Phe	Ser	Arg	Glu	Lys	Lys	Ala	Ala	Lys				
		260						265					270						
Thr	Leu	Gly	Ile	Val	Val	Gly	Cys	Phe	Val	Leu	Cys	Trp	Leu	Pro	Phe				
	275						280					285							
Phe	Leu	Val	Met	Pro	Ile	Gly	Ser	Phe	Phe	Pro	Asp	Phe	Lys	Pro	Ser				
	290					295					300								
Glu	Thr	Val	Phe	Lys	Ile	Val	Phe	Trp	Leu	Gly	Tyr	Leu	Asn	Ser	Cys				
305					310					315					320				
Ile	Asn	Pro	Ile	Ile	Tyr	Pro	Cys	Ser	Ser	Gln	Glu	Phe	Lys	Lys	Ala				
			325					330						335					
Phe	Gln	Asn	Val	Leu	Arg	Ile	Gln	Cys	Leu	Arg	Arg	Lys	Gln	Ser	Ser				
		340						345					350						
Lys	His	Ala	Leu	Gly	Tyr	Thr	Leu	His	Pro	Pro	Ser	Gln	Ala	Val	Glu				
	355						360					365							
Gly	Gln	His	Lys	Asp	Met	Val	Arg	Ile	Pro	Val	Gly	Ser	Arg	Glu	Thr				
	370					375					380								
Phe	Tyr	Arg	Ile	Ser	Lys	Thr	Asp	Gly	Val	Cys	Glu	Trp	Lys	Phe	Phe				
385					390					395					400				
Ser	Ser	Met	Pro	Arg	Gly	Ser	Ala	Arg	Ile	Thr	Val	Ser	Lys	Asp	Gln				
			405					410						415					
Ser	Ser	Cys	Thr	Thr	Ala	Arg	Thr	Lys	Ser	Arg	Ser	Val	Thr	Arg	Leu				
		420						425					430						
Glu	Cys	Ser	Gly	Met	Ile	Leu	Ala	His	Cys	Asn	Leu	Arg	Leu	Pro	Gly				
	435						440					445							
Ser	Arg	Asp	Ser	Pro	Ala	Ser	Ala	Ser	Gln	Ala	Ala	Gly	Thr	Thr	Gly				
	450					455				460									
Asp	Val	Pro	Pro	Gly	Arg	Arg	His	Gln	Ala	Gln	Leu	Ile	Phe	Val	Phe				
465					470					475					480				

Leu Val Glu Thr Gly Phe His His Val Gly Gln Asp Asp Leu Asp Leu  
 485 490 495

Leu Thr Ser

<210> 16

<211> 429

<212> PRT

<213> Homo sapiens

<400> 16

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln  
 1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
 20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
 35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
 50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
 65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg  
 85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
 115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu  
 130 135 140

Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly  
 145 150 155 160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys  
 165 170 175

Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
 180 185 190

Phe Tyr Leu Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
 195 200 205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
 210 215 220

Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
 225 230 235 240

Ala Pro Ala Gly Gly Ser Gly Met Ala Ser Ala Lys Thr Lys Thr His

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                245                250                255
Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys
                260                265                270

Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe
                275                280                285

Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser
                290                295                300

Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys
305                310                315                320

Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala
                325                330                335

Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser
                340                345                350

Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu
                355                360                365

Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Arg Glu Thr
370                375                380

Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe
385                390                395                400

Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln
                405                410                415

Ser Ser Cys Thr Thr Ala Arg Gly His Thr Pro Met Thr
                420                425

<210> 17
<211> 455
<212> PRT
<213> Homo sapiens

<400> 17
Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr Gln
 1                5                10                15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile
                20                25                30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile
                35                40                45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr
50                55                60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu
65                70                75                80

Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg
                85                90                95

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Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110  
 Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
 115 120 125  
 Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu  
 130 135 140  
 Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly  
 145 150 155 160  
 Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys  
 165 170 175  
 Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
 180 185 190  
 Phe Tyr Leu Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
 195 200 205  
 Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
 210 215 220  
 Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
 225 230 235 240  
 Ala Pro Ala Gly Gly Ser Gly Met Ala Ser Ala Lys Thr Lys Thr His  
 245 250 255  
 Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
 260 265 270  
 Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
 275 280 285  
 Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser  
 290 295 300  
 Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys  
 305 310 315 320  
 Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala  
 325 330 335  
 Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Cys Arg Lys Gln Ser Ser  
 340 345 350  
 Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu  
 355 360 365  
 Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Arg Glu Thr  
 370 375 380  
 Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe  
 385 390 395 400  
 Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln

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                405                410                415
Ser Ser Cys Thr Thr Ala Arg Arg Gly Met Asp Cys Arg Tyr Phe Thr
      420                425                430

Lys Asn Cys Arg Glu His Ile Lys His Val Asn Phe Met Met Pro Pro
      435                440                445

Trp Arg Lys Gly Leu Glu Cys
      450                455

<210> 18
<211> 466
<212> PRT
<213> Rattus norvegicus

<400> 18
Met Val Leu Leu Ser Glu Asn Ala Ser Glu Gly Ser Asn Cys Thr His
  1                5                10                15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile
      20                25                30

Leu Gly Gly Leu Ile Ile Phe Gly Val Leu Gly Asn Ile Leu Val Ile
      35                40                45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr
      50                55                60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu
      65                70                75                80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg
      85                90                95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala
      100                105                110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val
      115                120                125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Val
      130                135                140

Arg Ala Leu Leu Cys Val Trp Val Leu Ser Leu Val Ile Ser Ile Gly
      145                150                155                160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys
      165                170                175

Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser
      180                185                190

Phe Tyr Val Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr
      195                200                205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr
      210                215                220

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Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
 225 230 235 240  
 Val Pro Ala Glu Gly Gly Gly Val Ser Ser Ala Lys Asn Lys Thr His  
 245 250 255  
 Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
 260 265 270  
 Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
 275 280 285  
 Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser  
 290 295 300  
 Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys  
 305 310 315 320  
 Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala  
 325 330 335  
 Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Arg Gln Ser Ser  
 340 345 350  
 Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Leu Glu  
 355 360 365  
 Gly Gln His Arg Asp Met Val Arg Ile Pro Val Gly Ser Gly Glu Thr  
 370 375 380  
 Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe  
 385 390 395 400  
 Ser Ser Met Pro Gln Gly Ser Ala Arg Ile Thr Val Pro Lys Asp Gln  
 405 410 415  
 Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val  
 420 425 430  
 Cys Cys Cys Val Gly Ser Ser Ala Pro Arg Pro Glu Glu Asn His Gln  
 435 440 445  
 Val Pro Thr Ile Lys Ile His Thr Ile Ser Leu Gly Glu Asn Gly Glu  
 450 455 460  
 Glu Val  
 465

&lt;210&gt; 19

&lt;211&gt; 466

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 19

Met Val Leu Leu Ser Glu Asn Ala Ser Glu Gly Ser Asn Cys Thr His  
 1 5 10 15



Pro Pro Ala Gln Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
                   20                  25                  30  
 Leu Gly Gly Leu Ile Ile Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
                   35                  40                  45  
 Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
                   50                  55                  60  
 Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
                   65                  70                  75                  80  
 Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg  
                   85                  90                  95  
 Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
                   100                  105                  110  
 Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
                   115                  120                  125  
 Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Val  
                   130                  135                  140  
 Arg Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly  
                   145                  150                  155                  160  
 Pro Leu Phe Gly Trp Arg Gln Gln Ala Pro Glu Asp Glu Thr Ile Cys  
                   165                  170                  175  
 Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
                   180                  185                  190  
 Phe Tyr Val Pro Leu Thr Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
                   195                  200                  205  
 Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
                   210                  215                  220  
 Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
                   225                  230                  235                  240  
 Val Pro Ala Glu Gly Ser Gly Val Ser Ser Ala Lys Asn Lys Thr His  
                   245                  250                  255  
 Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
                   260                  265                  270  
 Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
                   275                  280                  285  
 Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asn Phe Lys Pro Pro  
                   290                  295                  300  
 Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys  
                   305                  310                  315                  320  
 Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala  
                   325                  330                  335

Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Arg Gln Ser Ser  
340 345 350

Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu  
355 360 365

Glu Gln His Arg Gly Met Val Arg Ile Pro Val Gly Ser Gly Glu Thr  
370 375 380

Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe  
385 390 395 400

Ser Ser Met Pro Gln Gly Ser Ala Arg Ile Thr Met Pro Lys Asp Gln  
405 410 415

Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val  
420 425 430

Cys Cys Cys Val Gly Ser Ser Thr Pro Arg Pro Glu Glu Asn His Gln  
435 440 445

Val Pro Thr Ile Lys Ile His Thr Ile Ser Leu Gly Glu Asn Gly Glu  
450 455 460

Glu Val  
465

<210> 20

<211> 466

<212> PRT

<213> Bos taurus

<400> 20

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr His  
1 5 10 15

Pro Pro Pro Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg  
85 90 95

Val Phe Cys Asn Val Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
100 105 110

Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Lys Arg Gly Leu  
 130 135 140  
 Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly  
 145 150 155 160  
 Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys  
 165 170 175  
 Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
 180 185 190  
 Phe Tyr Val Pro Leu Thr Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
 195 200 205  
 Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
 210 215 220  
 Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
 225 230 235 240  
 Ala Gln Val Gly Gly Ser Gly Val Thr Ser Ala Lys Asn Lys Thr His  
 245 250 255  
 Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
 260 265 270  
 Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
 275 280 285  
 Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Arg Pro Ser  
 290 295 300  
 Glu Thr Val Phe Lys Ile Ala Phe Trp Leu Gly Tyr Leu Asn Ser Cys  
 305 310 315 320  
 Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala  
 325 330 335  
 Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser  
 340 345 350  
 Lys His Thr Leu Gly Tyr Thr Leu His Ala Pro Ser His Val Leu Glu  
 355 360 365  
 Gly Gln His Lys Asp Leu Val Arg Ile Pro Val Gly Ser Ala Glu Thr  
 370 375 380  
 Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Ile Phe  
 385 390 395 400  
 Ser Ser Leu Pro Arg Gly Ser Ala Arg Met Ala Val Ala Arg Asp Pro  
 405 410 415  
 Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val  
 420 425 430  
 Cys Cys Cys Leu Gly Pro Ser Thr Pro Ser His Gly Glu Asn His Gln  
 435 440 445

Ile Pro Thr Ile Lys Ile His Thr Ile Ser Leu Ser Glu Asn Gly Glu  
 450 455 460

Glu Val  
 465

<210> 21  
 <211> 295  
 <212> PRT  
 <213> Canis familiaris

<400> 21  
 Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr His  
 1 5 10 15  
 Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
 20 25 30  
 Leu Gly Gly Leu Ile Ile Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
 35 40 45  
 Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
 50 55 60  
 Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
 65 70 75 80  
 Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg  
 85 90 95  
 Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110  
 Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
 115 120 125  
 Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Lys Arg Gly Leu  
 130 135 140  
 Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly  
 145 150 155 160  
 Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys  
 165 170 175  
 Gln Ile Thr Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
 180 185 190  
 Phe Tyr Val Pro Leu Thr Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
 195 200 205  
 Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
 210 215 220  
 Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
 225 230 235 240

Ala Pro Val Gly Gly Thr Gly Val Ser Ser Ala Lys Asn Lys Thr His  
245 250 255

Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
260 265 270

Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
275 280 285

Phe Leu Val Met Pro Ile Gly  
290 295

<210> 22

<211> 466

<212> PRT

<213> Oryctolagus cuniculus

<400> 22

Met Val Phe Leu Ser Gly Asn Ala Ser Asp Ser Ser Asn Cys Thr His  
1 5 10 15

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
20 25 30

Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
35 40 45

Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
50 55 60

Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
65 70 75 80

Pro Phe Ser Ala Ile Phe Glu Ile Leu Gly Tyr Trp Ala Phe Gly Arg  
85 90 95

Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
100 105 110

Ser Ile Ile Ser Leu Cys Val Ile Ser Ile Asp Arg Tyr Ile Gly Val  
115 120 125

Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu  
130 135 140

Arg Ala Leu Leu Cys Val Trp Ala Phe Ser Leu Val Ile Ser Val Gly  
145 150 155 160

Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Asp Asp Glu Thr Ile Cys  
165 170 175

Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
180 185 190

Phe Tyr Val Pro Leu Thr Ile Ile Leu Ala Met Tyr Cys Arg Val Tyr  
195 200 205

Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr

210	215	220
Asp Lys Ser Asp Ser	Glu Gln Val Thr Leu	Arg Ile His Arg Lys Asn
225	230	235 240
Ala Pro Ala Gly Gly Ser Gly Val Ala Ser Ala Lys Asn Lys Thr His		
	245	250 255
Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys		
	260	265 270
Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe		
	275	280 285
Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Pro		
	290	295 300
Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys		
	305	310 315 320
Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala		
	325	330 335
Phe Gln Asn Val Leu Lys Ile Gln Cys Leu Arg Arg Lys Gln Ser Ser		
	340	345 350
Lys His Ala Leu Gly Tyr Thr Leu His Ala Pro Ser Gln Ala Leu Glu		
	355	360 365
Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Gly Glu Thr		
	370	375 380
Phe Tyr Lys Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe		
	385	390 395 400
Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Pro Lys Asp Gln		
	405	410 415
Ser Ala Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val		
	420	425 430
Cys Cys Cys Val Gly Pro Ser Thr Pro Asn Pro Gly Glu Asn His Gln		
	435	440 445
Val Pro Thr Ile Lys Ile His Thr Ile Ser Leu Ser Glu Asn Gly Glu		
	450	455 460
Glu Val		
465		

&lt;210&gt; 23

&lt;211&gt; 466

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 23

Met	Val	Phe	Leu	Ser	Gly	Asn	Ala	Ser	Asp	Ser	Ser	Asn	Cys	Thr	Gln
1				5					10					15	

Pro Pro Ala Pro Val Asn Ile Ser Lys Ala Ile Leu Leu Gly Val Ile  
                   20                  25                  30  
 Leu Gly Gly Leu Ile Leu Phe Gly Val Leu Gly Asn Ile Leu Val Ile  
                   35                  40                  45  
 Leu Ser Val Ala Cys His Arg His Leu His Ser Val Thr His Tyr Tyr  
                   50                  55                  60  
 Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Thr Ser Thr Val Leu  
                   65                  70                  75                  80  
 Pro Phe Ser Ala Ile Phe Glu Val Leu Gly Tyr Trp Ala Phe Gly Arg  
                   85                  90                  95  
 Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
                   100                  105                  110  
 Ser Ile Met Gly Leu Cys Ile Ile Ser Ile Asp Arg Tyr Ile Gly Val  
                   115                  120                  125  
 Ser Tyr Pro Leu Arg Tyr Pro Thr Ile Val Thr Gln Arg Arg Gly Leu  
                   130                  135                  140  
 Met Ala Leu Leu Cys Val Trp Ala Leu Ser Leu Val Ile Ser Ile Gly  
                   145                  150                  155                  160  
 Pro Leu Phe Gly Trp Arg Gln Pro Ala Pro Glu Asp Glu Thr Ile Cys  
                   165                  170                  175  
 Gln Ile Asn Glu Glu Pro Gly Tyr Val Leu Phe Ser Ala Leu Gly Ser  
                   180                  185                  190  
 Phe Tyr Leu Pro Leu Ala Ile Ile Leu Val Met Tyr Cys Arg Val Tyr  
                   195                  200                  205  
 Val Val Ala Lys Arg Glu Ser Arg Gly Leu Lys Ser Gly Leu Lys Thr  
                   210                  215                  220  
 Asp Lys Ser Asp Ser Glu Gln Val Thr Leu Arg Ile His Arg Lys Asn  
                   225                  230                  235                  240  
 Ala Pro Ala Gly Gly Ser Gly Met Ala Ser Ala Lys Thr Lys Thr His  
                   245                  250                  255  
 Phe Ser Val Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys  
                   260                  265                  270  
 Thr Leu Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe  
                   275                  280                  285  
 Phe Leu Val Met Pro Ile Gly Ser Phe Phe Pro Asp Phe Lys Pro Ser  
                   290                  295                  300  
 Glu Thr Val Phe Lys Ile Val Phe Trp Leu Gly Tyr Leu Asn Ser Cys  
                   305                  310                  315                  320  
 Ile Asn Pro Ile Ile Tyr Pro Cys Ser Ser Gln Glu Phe Lys Lys Ala

325 330 335  
 Phe Gln Asn Val Leu Arg Ile Gln Cys Leu Cys Arg Lys Gln Ser Ser  
 340 345 350  
 Lys His Ala Leu Gly Tyr Thr Leu His Pro Pro Ser Gln Ala Val Glu  
 355 360 365  
 Gly Gln His Lys Asp Met Val Arg Ile Pro Val Gly Ser Arg Glu Thr  
 370 375 380  
 Phe Tyr Arg Ile Ser Lys Thr Asp Gly Val Cys Glu Trp Lys Phe Phe  
 385 390 395 400  
 Ser Ser Met Pro Arg Gly Ser Ala Arg Ile Thr Val Ser Lys Asp Gln  
 405 410 415  
 Ser Ser Cys Thr Thr Ala Arg Val Arg Ser Lys Ser Phe Leu Gln Val  
 420 425 430  
 Cys Cys Cys Val Gly Pro Ser Thr Pro Ser Leu Asp Lys Asn His Gln  
 435 440 445  
 Val Pro Thr Ile Lys Val His Thr Ile Ser Leu Ser Glu Asn Gly Glu  
 450 455 460  
 Glu Val  
 465  
 <210> 24  
 <211> 470  
 <212> PRT  
 <213> *Oryzias latipes*  
 <400> 24  
 Met Thr Pro Ser Ser Val Thr Leu Asn Cys Ser Asn Cys Ser His Val  
 1 5 10 15  
 Leu Ala Pro Glu Leu Asn Thr Val Lys Ala Val Val Leu Gly Met Val  
 20 25 30  
 Leu Gly Ile Phe Ile Leu Phe Gly Val Ile Gly Asn Ile Leu Val Ile  
 35 40 45  
 Leu Ser Val Val Cys His Arg His Leu Gln Thr Val Thr Tyr Tyr Phe  
 50 55 60  
 Ile Val Asn Leu Ala Val Ala Asp Leu Leu Leu Ser Ser Thr Val Leu  
 65 70 75 80  
 Pro Phe Ser Ala Ile Phe Glu Ile Leu Asp Arg Trp Val Phe Gly Arg  
 85 90 95  
 Val Phe Cys Asn Ile Trp Ala Ala Val Asp Val Leu Cys Cys Thr Ala  
 100 105 110  
 Ser Ile Met Ser Leu Cys Val Ile Ser Val Asp Arg Tyr Ile Gly Val  
 115 120 125



Ser Tyr Pro Leu Arg Tyr Pro Ala Ile Met Thr Lys Arg Arg Ala Leu  
 130 135 140  
 Leu Ala Val Met Leu Leu Trp Val Leu Ser Val Ile Ile Ser Ile Gly  
 145 150 155 160  
 Pro Leu Phe Gly Trp Lys Glu Pro Ala Pro Glu Asp Glu Thr Val Cys  
 165 170 175  
 Lys Ile Thr Glu Glu Pro Gly Tyr Ala Ile Phe Ser Ala Val Gly Ser  
 180 185 190  
 Phe Tyr Leu Pro Leu Ala Ile Ile Leu Ala Met Tyr Cys Arg Val Tyr  
 195 200 205  
 Val Val Ala Gln Lys Glu Ser Arg Gly Leu Lys Glu Gly Gln Lys Ile  
 210 215 220  
 Glu Lys Ser Asp Ser Glu Gln Val Ile Leu Arg Met His Arg Gly Asn  
 225 230 235 240  
 Thr Thr Val Ser Glu Asp Glu Ala Leu Arg Ser Arg Thr His Phe Ala  
 245 250 255  
 Leu Arg Leu Leu Lys Phe Ser Arg Glu Lys Lys Ala Ala Lys Thr Leu  
 260 265 270  
 Gly Ile Val Val Gly Cys Phe Val Leu Cys Trp Leu Pro Phe Phe Leu  
 275 280 285  
 Val Leu Pro Ile Gly Ser Ile Phe Pro Ala Tyr Arg Pro Ser Asp Thr  
 290 295 300  
 Val Phe Lys Ile Thr Phe Trp Leu Gly Tyr Phe Asn Ser Cys Ile Asn  
 305 310 315 320  
 Pro Ile Ile Tyr Leu Cys Ser Asn Gln Glu Phe Lys Lys Ala Phe Gln  
 325 330 335  
 Ser Leu Leu Gly Val His Cys Leu Arg Met Thr Pro Arg Ala His His  
 340 345 350  
 His His Leu Ser Val Gly Gln Ser Gln Thr Gln Gly His Ser Leu Thr  
 355 360 365  
 Ile Ser Leu Asp Ser Lys Gly Ala Pro Cys Arg Leu Ser Pro Ser Ser  
 370 375 380  
 Ser Val Ala Leu Ser Arg Thr Pro Ser Ser Arg Asp Ser Arg Glu Trp  
 385 390 395 400  
 Arg Val Phe Ser Gly Gly Pro Ile Asn Ser Gly Pro Gly Pro Thr Glu  
 405 410 415  
 Ala Gly Arg Ala Lys Val Ala Lys Leu Cys Asn Lys Ser Leu His Arg  
 420 425 430  
 Thr Cys Cys Cys Ile Leu Arg Ala Arg Thr Pro Thr Gln Asp Pro Ala

435                      440                      445  
 Pro Leu Gly Asp Leu Pro Thr Ile Lys Ile His Gln Leu Ser Leu Ser  
     450                      455                      460  
  
 Glu Lys Gly Glu Ser Val  
 465                      470  
  
 <210> 25  
 <211> 391  
 <212> PRT  
 <213> Branchiostoma lanceolatum  
  
 <400> 25  
 Met Ser Ala Asn Thr Thr Val Ser Pro Thr Glu Thr Thr Ala Asn Leu  
     1                      5                      10                      15  
  
 Thr Ala Asn Ser Thr Glu Ala Ser Val Gly Ser Cys Phe Ala Pro Asn  
                     20                      25                      30  
  
 Pro Tyr Ser Ala Gly Val Gln Ala Val Leu Gly Leu Ile Thr Val Ile  
                     35                      40                      45  
  
 Leu Ile Leu Leu Thr Val Ile Gly Asn Val Leu Val Ile Leu Ala Val  
     50                      55                      60  
  
 Thr Cys His Arg Lys Met Arg Thr Val Thr Asn Phe Phe Ile Val Ser  
     65                      70                      75                      80  
  
 Leu Ala Cys Ala Asp Leu Ser Val Gly Ile Thr Val Leu Pro Phe Ala  
                     85                      90                      95  
  
 Ala Thr Asn Asp Ile Leu Gly Tyr Trp Pro Phe Gly Gly Tyr Cys Asp  
                     100                      105                      110  
  
 Val Trp Val Ser Phe Asp Val Leu Asn Ser Thr Ala Ser Ile Leu Asn  
                     115                      120                      125  
  
 Leu Val Val Ile Ala Phe Asp Arg Phe Leu Ala Ile Thr Ala Pro Phe  
     130                      135                      140  
  
 Thr Tyr His Thr Arg Met Thr Glu Arg Thr Ala Gly Ile Leu Ile Ala  
 145                      150                      155                      160  
  
 Thr Val Trp Gly Ile Ser Leu Val Val Ser Phe Leu Pro Ile Gln Ala  
                     165                      170                      175  
  
 Gly Trp Tyr Arg Asp Asn Gln Ser Glu Glu Ala Leu Ala Ile Tyr Ser  
                     180                      185                      190  
  
 Asp Pro Cys Leu Cys Ile Phe Thr Ala Ser Thr Ala Tyr Thr Ile Val  
                     195                      200                      205  
  
 Ser Ser Leu Ile Ser Phe Tyr Ile Pro Leu Leu Ile Met Leu Val Phe  
     210                      215                      220  
  
 Tyr Gly Ile Ile Phe Lys Ala Ala Arg Asp Gln Ala Arg Lys Ile Asn  
 225                      230                      235                      240

Ala Leu Glu Gly Arg Leu Glu Gln Glu Asn Asn Arg Gly Lys Lys Ile  
245 250 255

Ser Leu Ala Lys Glu Lys Lys Ala Ala Lys Thr Leu Gly Ile Ile Met  
260 265 270

Gly Val Phe Ile Leu Cys Trp Leu Pro Phe Phe Val Val Asn Ile Val  
275 280 285

Asn Pro Phe Cys Asp Arg Cys Val Gln Pro Ala Val Phe Ile Ala Leu  
290 295 300

Thr Trp Leu Gly Trp Ile Asn Ser Cys Phe Asn Pro Ile Ile Tyr Ala  
305 310 315 320

Phe Asn Lys Glu Phe Arg Lys Val Phe Val Lys Met Ile Cys Cys His  
325 330 335

Lys Cys Arg Gly Val Thr Val Gly Pro Asn His Ala Asp Leu Asn Tyr  
340 345 350

Asp Pro Val Ala Met Arg Leu Lys Lys Arg Gly Glu Asn Ala Asn Gly  
355 360 365

Thr Val Asn Gly Asp Ala Asn Gly Lys Ala Asn Gly Asn Ile Glu Ala  
370 375 380

Gly Glu Gly Thr Ser Ser Ser  
385 390

&lt;210&gt; 26

&lt;211&gt; 36

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthesized peptide

&lt;400&gt; 26

Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His  
1 5 10 15

Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile  
20 25 30

Ile Arg Ser Thr  
35

&lt;210&gt; 27

&lt;211&gt; 13

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthesized

## peptide

&lt;400&gt; 27

Gln Arg Lys Pro Gln Leu Leu Gln Val Thr Asn Arg Phe  
 1 5 10

&lt;210&gt; 28

&lt;211&gt; 5

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt; .

<223> Description of Artificial Sequence: Synthesized  
 peptide

&lt;400&gt; 28

Trp Pro Leu Asn Ser  
 1 5

&lt;210&gt; 29

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthesized  
 peptide

&lt;400&gt; 29

Asp Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met  
 1 5 10 15

Thr Gln Arg Arg  
 20

&lt;210&gt; 30

&lt;211&gt; 23

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthesized  
 peptide

&lt;400&gt; 30

Gly Gln Ala Ala Phe Asp Glu Arg Asn Ala Leu Cys Ser Met Ile Trp  
 1 5 10 15

Gly Ala Ser Pro Ser Tyr Thr  
 20

&lt;210&gt; 31

&lt;211&gt; 182

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthesized peptide

&lt;400&gt; 31

Cys Ala Ala Arg Arg Gln His Ala Leu Leu Tyr Asn Val Lys Arg His  
 1 5 10 15

Ser Leu Glu Val Arg Val Lys Asp Cys Val Glu Asn Glu Asp Glu Glu  
 20 25 30

Gly Ala Glu Lys Lys Glu Glu Phe Gln Asp Glu Ser Glu Phe Arg Arg  
 35 40 45

Gln His Glu Gly Glu Val Lys Ala Lys Glu Gly Arg Met Glu Ala Lys  
 50 55 60

Asp Gly Ser Leu Lys Ala Lys Glu Gly Ser Thr Gly Thr Ser Glu Ser  
 65 70 75 80

Ser Val Glu Ala Gly Ser Glu Glu Val Arg Glu Ser Ser Thr Val Ala  
 85 90 95

Ser Asp Gly Ser Met Glu Gly Lys Glu Gly Ser Thr Lys Val Glu Glu  
 100 105 110

Asn Ser Met Lys Ala Asp Lys Gly Arg Thr Glu Val Asn Gln Cys Ser  
 115 120 125

Ile Asp Leu Gly Glu Asp Asp Met Glu Phe Gly Glu Asp Asp Ile Asn  
 130 135 140

Phe Ser Glu Asp Asp Val Glu Ala Val Asn Ile Pro Glu Ser Leu Pro  
 145 150 155 160

Pro Ser Arg Arg Asn Ser Asn Ser Asn Pro Pro Leu Pro Arg Cys Tyr  
 165 170 175

Gln Cys Lys Ala Ala Lys  
 180

&lt;210&gt; 32

&lt;211&gt; 15

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthesized peptide

&lt;400&gt; 32

Ala Val Leu Ala Val Trp Val Asp Val Glu Thr Gln Val Pro Gln  
 1 5 10 15

&lt;210&gt; 33

&lt;211&gt; 55

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthesized peptide

&lt;400&gt; 33

Tyr Gly Tyr Met His Lys Thr Ile Lys Lys Glu Ile Gln Asp Met Leu  
 1 5 10 15

Lys Lys Phe Phe Cys Lys Glu Lys Pro Pro Lys Glu Asp Ser His Pro  
 20 25 30

Asp Leu Pro Gly Thr Glu Gly Gly Thr Glu Gly Lys Ile Val Pro Ser  
 35 40 45

Tyr Asp Ser Ala Thr Phe Pro  
 50 55

&lt;210&gt; 34

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: HGPRBMY8 sense primer

&lt;400&gt; 34

gcagagcact cctccactct 20

&lt;210&gt; 35

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: HGPRBMY8 anti-sense primer

&lt;400&gt; 35

agcaggcaat catgacaatc 20

&lt;210&gt; 36

&lt;211&gt; 20

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: GPCR84 sense primer

&lt;400&gt; 36

gttagcctca cccacctgtt 20

<210> 37  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: GPCR84  
 anti-sense primer

<400> 37  
 cacaatccag gtgccataga 20

<210> 38  
 <211> 42  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: HGPRBMY8 5'  
 primer

<400> 38  
 gtccccaagc ttgcacatg acgtccacct gcaccaacag ca 42

<210> 39  
 <211> 62  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: HGPRBMY8 3'  
 Flag-tag primer

<400> 39  
 cgggatccta cttgtcgtcg tcgtccttgt agtccatagg aaaagtagca gaatcgtagg 60  
 aa 62

<210> 40  
 <211> 407  
 <212> PRT  
 <213> Homo sapiens

<400> 40  
 Met Ser Leu Asn Ser Ser Leu Ser Cys Arg Lys Glu Leu Ser Asn Leu  
 1 5 10 15  
 Thr Glu Glu Glu Gly Gly Glu Gly Gly Val Ile Ile Thr Gln Phe Ile  
 20 25 30  
 Ala Ile Ile Val Ile Thr Ile Phe Val Cys Leu Gly Asn Leu Val Ile  
 35 40 45  
 Val Val Thr Leu Tyr Lys Lys Ser Tyr Leu Leu Thr Leu Ser Asn Lys  
 50 55 60

Phe Val Phe Ser Leu Thr Leu Ser Asn Phe Leu Leu Ser Val Leu Val  
 65 70 75 80  
 Leu Pro Phe Val Val Thr Ser Ser Ile Arg Arg Glu Trp Ile Phe Gly  
 85 90 95  
 Val Val Trp Cys Asn Phe Ser Ala Leu Leu Tyr Leu Leu Ile Ser Ser  
 100 105 110  
 Ala Ser Met Leu Thr Leu Gly Val Ile Ala Ile Asp Arg Tyr Tyr Ala  
 115 120 125  
 Val Leu Tyr Pro Met Val Tyr Pro Met Lys Ile Thr Gly Asn Arg Ala  
 130 135 140  
 Val Met Ala Leu Val Tyr Ile Trp Leu His Ser Leu Ile Gly Cys Leu  
 145 150 155 160  
 Pro Pro Leu Phe Gly Trp Ser Ser Val Glu Phe Asp Glu Phe Lys Trp  
 165 170 175  
 Met Cys Val Ala Ala Trp His Arg Glu Pro Gly Tyr Thr Ala Phe Trp  
 180 185 190  
 Gln Ile Trp Cys Ala Leu Phe Pro Phe Leu Val Met Leu Val Cys Tyr  
 195 200 205  
 Gly Phe Ile Phe Arg Val Ala Arg Val Lys Ala Arg Lys Val His Cys  
 210 215 220  
 Gly Thr Val Val Ile Val Glu Glu Asp Ala Gln Arg Thr Gly Arg Lys  
 225 230 235 240  
 Asn Ser Ser Thr Ser Thr Ser Ser Ser Gly Ser Arg Arg Asn Ala Phe  
 245 250 255  
 Gln Gly Val Val Tyr Ser Ala Asn Gln Cys Lys Ala Leu Ile Thr Ile  
 260 265 270  
 Leu Val Val Leu Gly Ala Phe Met Val Thr Trp Gly Pro Tyr Met Val  
 275 280 285  
 Val Ile Ala Ser Glu Ala Leu Trp Gly Lys Ser Ser Val Ser Pro Ser  
 290 295 300  
 Leu Glu Thr Trp Ala Thr Trp Leu Ser Phe Ala Ser Ala Val Cys His  
 305 310 315 320  
 Pro Leu Ile Tyr Gly Leu Trp Asn Lys Thr Val Arg Lys Glu Leu Leu  
 325 330 335  
 Gly Met Cys Phe Gly Asp Arg Tyr Tyr Arg Glu Pro Phe Val Gln Arg  
 340 345 350  
 Gln Arg Thr Ser Arg Leu Phe Ser Ile Ser Asn Arg Ile Thr Asp Leu  
 355 360 365  
 Gly Leu Ser Pro His Leu Thr Ala Leu Met Ala Gly Gly Gln Pro Leu  
 370 375 380



Gly His Ser Ser Ser Thr Gly Asp Thr Gly Phe Ser Cys Ser Gln Asp  
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Ser Gly Asn Leu Arg Ala Leu  
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<210> 41

<211> 448

<212> PRT

<213> Homo sapiens

<400> 41

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Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln  
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Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln  
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Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe  
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Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His  
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Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Val Val Ser Val Asp  
 115 120 125

Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr  
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Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile  
 145 150 155 160

Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp  
 165 170 175

Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr  
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Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met  
 195 200 205

Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala  
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Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp  
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<210> 42
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<212> PRT
<213> Homo sapiens

<400> 42
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Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln

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Ser Asn Pro Pro Leu Pro Arg Cys Tyr Gln Cys Lys Ala Lys Lys Val  
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Gly Thr Glu Gly Lys Ile Val Pro Ser Tyr Asp Ser Ala Thr Phe Pro  
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<210> 43  
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Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln  
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Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln  
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Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe  
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Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His  
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Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Leu Val Ser Val Asp  
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Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr  
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Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile  
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Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp  
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Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr

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&lt;210&gt; 44

&lt;211&gt; 1659

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 44

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1659

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&lt;210&gt; 45

&lt;211&gt; 1527

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 45

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 1527

&lt;210&gt; 46

&lt;211&gt; 1527

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 46

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<212> DNA

<213> Homo sapiens

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 <213> Homo sapiens

<220>  
 <223> Xaa=Unknown, modified, or any amino acid

<400> 49  
 Met Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser His  
 1 5 10 15

Thr Cys Met Pro Leu Ser Lys Met Pro Ile Ser Leu Ala His Gly Ile  
                   20                  25                  30  
 Ile Arg Ser Thr Val Leu Val Ile Phe Leu Ala Ala Ser Phe Val Gly  
                   35                  40                  45  
 Asn Ile Val Leu Ala Leu Val Leu Gln Arg Lys Pro Gln Leu Leu Gln  
           50                  55                  60  
 Val Thr Asn Arg Phe Ile Phe Asn Leu Leu Val Thr Asp Leu Leu Gln  
   65                  70                  75                  80  
 Ile Ser Leu Val Ala Pro Trp Val Val Ala Thr Ser Val Pro Leu Phe  
                   85                  90                  95  
 Trp Pro Leu Asn Ser His Phe Cys Thr Ala Leu Val Ser Leu Thr His  
                  100                 105                 110  
 Leu Phe Ala Phe Ala Ser Val Asn Thr Ile Val Xaa Val Ser Val Asp  
          115                 120                 125  
 Arg Tyr Leu Ser Ile Ile His Pro Leu Ser Tyr Pro Ser Lys Met Thr  
   130                 135                 140  
 Gln Arg Arg Gly Tyr Leu Leu Leu Tyr Gly Thr Trp Ile Val Ala Ile  
 145                 150                 155                 160  
 Leu Gln Ser Thr Pro Pro Leu Tyr Gly Trp Gly Gln Ala Ala Phe Asp  
                  165                 170                 175  
 Glu Arg Asn Ala Leu Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr  
          180                 185                 190  
 Thr Ile Leu Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met  
   195                 200                 205  
 Ile Ala Cys Tyr Ser Val Val Phe Cys Ala Ala Arg Arg Gln His Ala  
   210                 215                 220  
 Leu Leu Tyr Asn Val Lys Arg His Ser Leu Glu Val Arg Val Lys Asp  
 225                 230                 235                 240  
 Cys Val Glu Asn Glu Asp Glu Glu Gly Ala Glu Lys Lys Glu Glu Phe  
          245                 250                 255  
 Gln Asp Glu Ser Glu Phe Arg Arg Gln His Glu Gly Glu Val Lys Ala  
   260                 265                 270  
 Lys Glu Gly Arg Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu  
   275                 280                 285  
 Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly Ser Glu  
   290                 295                 300  
 Glu Val Arg Glu Ser Ser Thr Val Ala Ser Asp Gly Ser Met Glu Gly  
 305                 310                 315                 320  
 Lys Glu Gly Ser Thr Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys

					325						330					335	
Gly	Arg	Thr	Glu	Val	Asn	Gln	Cys	Ser	Ile	Asp	Leu	Gly	Glu	Asp	Xaa		
			340					345					350				
Met	Glu	Phe	Gly	Glu	Asp	Asp	Ile	Asn	Phe	Ser	Glu	Asp	Asp	Val	Glu		
		355					360					365					
Ala	Val	Asn	Ile	Pro	Glu	Ser	Leu	Pro	Pro	Ser	Arg	Arg	Asn	Ser	Asn		
		370				375					380						
Ser	Asn	Pro	Pro	Leu	Pro	Arg	Cys	Tyr	Gln	Cys	Lys	Ala	Xaa	Lys	Val		
385					390					395					400		
Ile	Phe	Ile	Ile	Ile	Phe	Ser	Tyr	Val	Leu	Ser	Leu	Gly	Pro	Tyr	Cys		
			405						410					415			
Phe	Leu	Ala	Val	Leu	Ala	Val	Trp	Val	Asp	Val	Glu	Thr	Gln	Val	Pro		
			420					425					430				
Gln	Trp	Val	Ile	Thr	Ile	Ile	Ile	Trp	Leu	Phe	Phe	Leu	Gln	Cys	Cys		
		435					440					445					
Ile	His	Pro	Tyr	Val	Tyr	Gly	Tyr	Met	His	Lys	Thr	Ile	Lys	Lys	Glu		
	450					455					460						
Ile	Gln	Asp	Met	Leu	Lys	Lys	Phe	Phe	Cys	Lys	Glu	Lys	Pro	Pro	Lys		
465					470					475					480		
Glu	Asp	Ser	His	Pro	Asp	Leu	Pro	Gly	Thr	Glu	Gly	Gly	Thr	Glu	Gly		
			485						490					495			
Lys	Ile	Val	Pro	Ser	Tyr	Asp	Ser	Ala	Thr	Phe	Pro						
		500						505									

<210> 50  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: SNP

<400> 50  
 caccattgtc ttggtgtcag t

21

<210> 51  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: SNP

<400> 51  
 caccattgtc gtggtgtcag t

21

<210> 52  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: SNP

<400> 52  
ggtgaagatg acatggagtt t 21

<210> 53  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: SNP

<400> 53  
ggtgaagatg gcatggagtt t 21

<210> 54  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: SNP

<400> 54  
gtgcaaagct gctaaagtga t 21

<210> 55  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: SNP

<400> 55  
gtgcaaagct actaaagtga t 21

<210> 56  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: SNP

<400> 56  
tgcaaagctg ctaaagtgat c 21

<210> 57  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: SNP

<400> 57  
 tgcaaagctg ataaagtgat c 21

<210> 58  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: SNP

<400> 58  
 gcaaagctgc taaagtgatc t 21

<210> 59  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: SNP

<400> 59  
 gcaaagctgc gaaagtgatc t 21

<210> 60  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: GAPDH F3  
 Forward primer

<400> 60  
 agccgagcca catcgct 17

<210> 61  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: GAPDH R1  
 Reverse primer

<400> 61  
gtgaccaggc gcccaatac 19

<210> 62  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: GAPDH-PVIC  
Taqman(R) Probe

<400> 62  
caaatccgtt gactccgacc ttcacctt 28

<210> 63  
<211> 99  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Oligo 1;  
N=A+G+C+T and B=C+G+T

<400> 63  
cgaagcgtaa gggcccagcc ggccnnbnnb nnbnbnbnbn nbnnbnnbnn bnnbnnbnnb 60  
nnbnbnbnbn nbnnbnnbnn bnnbccgggt ccgggcggc 99

<210> 64  
<211> 95  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Oligo 2;  
N=A+G+C+T and V=C+A+G

<400> 64  
aaaaggaaaa aagcggccgc vnnvnnvnnv nnvnnvnnvn nvnnvnnvnn vnnvnnvnnv 60  
nnvnnvnnvn nvnnvnnvnn gccgcccga ccggc 95

<210> 65  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 65  
Pro Gly Pro Gly Gly  
1 5

<210> 66  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 66  
 Gly Asp Phe Trp Tyr Glu Ala Cys Glu Ser Ser Cys Ala Phe Trp  
           1                  5                  10                  15

<210> 67  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 67  
 Leu Glu Trp Gly Ser Asp Val Phe Tyr Asp Val Tyr Asp Cys Cys  
           1                  5                  10                  15

<210> 68  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 68  
 Cys Leu Arg Ser Gly Thr Gly Cys Ala Phe Gln Leu Tyr Arg Phe  
           1                  5                  10                  15

<210> 69  
 <211> 15  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic polypeptide

<400> 69  
 Asn Asn Phe Pro Cys Leu Arg Ser Gly Arg Asn Cys Asp Ala Gly  
           1                  5                  10                  15

<210> 70  
 <211> 15

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 70

Arg	Ile	Val	Pro	Asn	Gly	Tyr	Phe	Asn	Val	His	Gly	Arg	Ser	Leu
1				5				10					15	

&lt;210&gt; 71

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 71

Arg	Ile	Asp	Ser	Cys	Ala	Lys	Tyr	Phe	Leu	Arg	Ser	Cys	Asp
1				5				10					

&lt;210&gt; 72

&lt;211&gt; 39

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic 5' primer

&lt;400&gt; 72

gcagcagcgg ccgcaccgtg ctggttatct tctcgccg

39

&lt;210&gt; 73

&lt;211&gt; 35

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic 3' primer

&lt;400&gt; 73

gcagcagtcg acaggaaaag tagcagaatc gtagg

35

&lt;210&gt; 74

&lt;211&gt; 38

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic 5'



primer

<400> 74  
gcagcagcgg ccgcatgacg tccacctgca ccaacagc

38

<210> 75  
<211> 37  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic 3'  
primer

<400> 75  
gcagcagtcg acatagacat aggggtggat gcagcac

37

<210> 76  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 76  
Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser  
1 5 10

<210> 77  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 77  
Gln Leu Leu Gln Val Thr Asn Arg Phe Ile Phe Asn Leu  
1 5 10

<210> 78  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 78  
Tyr Pro Ser Lys Met Thr Gln Arg Arg Gly Tyr Leu Leu  
1 5 10

<400> 79  
Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu Gly Ser  
1 5 10

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

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<210> 81
<211> 13
<212> PRT
<213> Artificial Sequence
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<400> 81  
Lys Val Glu Glu Asn Ser Met Lys Ala Asp Lys Gly Arg  
1 5 10

<220>  
<223> Description of Artificial Sequence: Synthetic polypeptide

<210> 83

&lt;211&gt; 13

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 83

Gly	Tyr	Met	His	Lys	Thr	Ile	Lys	Lys	Glu	Ile	Gln	Asp
1				5					10			

&lt;210&gt; 84

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 84

Ser	Thr	Cys	Thr	Asn	Ser	Thr	Arg	Glu	Ser	Asn	Ser	Ser	His
1				5					10				

&lt;210&gt; 85

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 85

Thr	Gly	Thr	Ser	Glu	Ser	Ser	Val	Glu	Ala	Arg	Gly	Ser	Glu
1				5					10				

&lt;210&gt; 86

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 86

Gly	Lys	Glu	Gly	Ser	Thr	Lys	Val	Glu	Glu	Asn	Ser	Met	Lys
1				5					10				

&lt;210&gt; 87

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 87

Asp	Asp	Ile	Asn	Phe	Ser	Glu	Asp	Asp	Val	Glu	Ala	Val	Asn
1					5				10				

&lt;210&gt; 88

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 88

Pro	Pro	Lys	Glu	Asp	Ser	His	Pro	Asp	Leu	Pro	Gly	Thr	Glu
1					5				10				

&lt;210&gt; 89

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 89

Leu	Leu	Tyr	Asn	Val	Lys	Arg	His	Ser	Leu	Glu	Val	Arg	Val
1					5				10				

&lt;210&gt; 90

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic polypeptide

&lt;400&gt; 90

Ser	Leu	Pro	Pro	Ser	Arg	Arg	Asn	Ser	Asn	Ser	Asn	Pro	Pro
1					5				10				

&lt;210&gt; 91

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic

polypeptide

<400> 91

Thr Ser Thr Cys Thr Asn Ser Thr Arg Glu Ser Asn Ser Ser  
1 5 10

<210> 92

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 92

Ser Thr Arg Glu Ser Asn Ser Ser His Thr Cys Met Pro Leu  
1 5 10

<210> 93

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 93

Gly Glu Asp Asp Ile Asn Phe Ser Glu Asp Asp Val Glu Ala  
1 5 10

<210> 94

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 94

Ile Ser Leu Ala His Gly Ile Ile Arg Ser Thr Val Leu Val Ile Phe  
1 5 10 15

<210> 95

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 95

Cys Ser Met Ile Trp Gly Ala Ser Pro Ser Tyr Thr Ile Leu Ser Val  
 1 5 10 15

<210> 96

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
 polypeptide

<400> 96

Met Glu Ala Lys Asp Gly Ser Leu Lys Ala Lys Glu Gly Ser Thr Gly  
 1 5 10 15

<210> 97

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
 polypeptide

<400> 97

Leu Lys Ala Lys Glu Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu  
 1 5 10 15

<210> 98

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
 polypeptide

<400> 98

Lys Glu Gly Ser Thr Gly Thr Ser Glu Ser Ser Val Glu Ala Arg Gly  
 1 5 10 15

<210> 99

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
 polypeptide

<400> 99

Thr Val Ala Ser Asp Gly Ser Met Glu Gly Lys Glu Gly Ser Thr Lys  
 1 5 10 15

D0047 NP

<210> 100  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 100  
His Pro Asp Leu Pro Gly Thr Glu Gly Gly Thr Glu Gly Lys Ile Val  
1 5 10 15

<210> 101  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 101  
Leu Pro Gly Thr Glu Gly Gly Thr Glu Gly Lys Ile Val Pro Ser Tyr  
1 5 10 15

<210> 102  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
polypeptide

<400> 102  
Ser Val Val Ser Phe Ile Val Ile Pro Leu Ile Val Met Ile Ala Cys  
1 5 10 15

Tyr Ser Val Val Phe  
20

D0047 NP

- 1 -